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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,036	09/11/2003	Anson Lee	706618US1	5793
24938	7590	08/30/2005	EXAMINER	
DAIMLERCHRYSLER INTELLECTUAL CAPITAL CORPORATION			MCCALL, ERIC SCOTT	
CIMS 483-02-19			ART UNIT	
800 CHRYSLER DR EAST			PAPER NUMBER	
AUBURN HILLS, MI 48326-2757			2855	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/660,036	LEE ET AL.	
	Examiner	Art Unit	
	Eric S. McCall	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

ENGINE MISFIRE DETECTION

NON-FINAL OFFICE ACTION

This action is in response to the Applicant's Request for Continued Examination (RCE) with amendment dated June 16, 2005.

TITLE

In view of the Applicant's amendment to the title and the corresponding comments, the objection to the title as set forth in the previous office action has been overcome and is withdrawn.

CLAIMS

Restriction

Newly submitted claims 11-16 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 1-10 do not require a nonlinear dynamic model based on manifold absolute pressure and a firing event signal, simplifying the model by separating it into an engine firing event estimator function and an engine load compensator function, or the use of a measurement noise factor as required in newly added claims 11-16.

Since the Applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11-16 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherer et al. (5,889,204) in view of Komurasaki (5,119,783).

With respect to claims 1 and 7, Scherer et al. suggest a method/system of detecting misfire in an engine comprising:

detecting engine speed fluctuations (col. 3, lines 1/2);
determining a linear model based on the engine speed fluctuations (col. 4, lines 48-51);
applying a Kalman filter to the linear model to determine parameters of the linear model (col. 2, lines 1-12).

Scherer et al. fail to teach detecting a misfire (engine firing) event in the engine based on the linear model as claimed.

However, it would have been obvious to one having ordinary skill in the art armed with said teach to detect an engine firing event such as a misfire based on the linear model as claimed.

The motivation being that Scherer et al. teach that the object of their device is to determine an engine load even during non-steady-state operation (col. 2, lines 61-65) wherein non-steady-state operation is caused by vibrating piston travel movement (col. 1, lines 34-40), and because vibrating piston travel movement is well known to include engine firing events such as misfire events.

Evidence to this well known fact can be found in the teaching of Komurasaki (5,119,783) at col. 2, lines 10-30 of which the Examiner is relying upon as a teaching reference to demonstrate such a relationship.

With respect to claims 2 and 8, Scherer et al. suggest representing a linear model as a difference equation (col. 5).

With respect to claims 3 and 9, Scherer et al. suggest the claimed subject matter thereof (col. 2, lines 1+).

With respect to claims 5 and 10, Scherer et al. suggest determining a load compensator signal based on an engine speed and a manifold absolute pressure (col. 4, lines 1-15).

With respect to independent claim 6, said claim parallels that of claims 1/2. Thus the Applicant's attention is directed to the above comments pertaining to claim 1 and to claim 2.

Response to Arguments

The Applicant's arguments pertaining to newly added claims 11-16 have been taken into consideration in the decision as to whether to restrict the claims, and the arguments support the above restriction requirement. The arguments are, however, deemed moot with respect to the prior art because of the restriction requirement.

With respect to claims 1-10, the Applicant has argued that the relied upon prior art of Scherer et al. does not disclose both determining a linear model and applying a Kalman filter to that linear model.

The Examiner disagrees. In col. 4, lines 48-51, the prior art of Scherer et al. sets forth the suggestion that a linear model, which is itself a Kalman filter, is determined based on engine speed fluctuations as claimed.

Next, the prior art of Scherer et al. is interpreted as suggesting the application of a Kalman filter to the model to determine parameters of the model as claimed (col. 2, lines 1-12).

The Applicant then argues that the prior art's Kalman filter cannot be both used to determine a linear model and then applied to the model to determine parameters of it. The Examiner disagrees based upon the wording of the Applicant's claims. The Applicant's claims set forth that a Kalman filter determines parameters of the model, but nothing in the Applicant's claims restrict the model from being determined by a Kalman filter.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric S. McCall
Primary Examiner
Art Unit 2855
Aug. 23, 2005